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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/786,783	02/25/2004	Seishi Ohmori	P2070US	3719
8968	7590	12/27/2007	EXAMINER	
DRINKER BIDDLE & REATH LLP			WANG, KENT F	
ATTN: PATENT DOCKET DEPT.				
191 N. WACKER DRIVE, SUITE 3700			ART UNIT	PAPER NUMBER
CHICAGO, IL 60606			2622	
			MAIL DATE	DELIVERY MODE
			12/27/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)
	10/786,783	OHMORI, SEISHI
	Examiner	Art Unit
	Kent Wang	2622

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 27 September 2007.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-20 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date. _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. The amendments, filed on 09/27/2007, have been entered and made of record. Claims 1-20 are pending.

Response to Arguments

2. Applicant's arguments with respect to claims 1-20 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
4. Claims 1-2 and 5-6 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Chiang (US 6,809,759) in view of Kawasaki (US 7,173,665).

Regarding claim 1, Chiang discloses a digital camera system comprising:

- a main body (a camera housing 11, Fig 1) that comprises an optical system (a lens 12, Fig 1) including a plurality of lenses to optically process light from a subject (the lens 12 can have added functionality to change the focused image, such as zoom capabilities, and an iris aperture to change both the exposure and depth

of field characteristics of the image; see col. 2 lines 57-65), an optoelectric converter (CCD 30, Fig 3) converting the light from the optical system into an electrical analog image signal (see col. 2, line 66-67), an analog-to-digital converter (an A/D converter 34, Fig 3) converting the analog image signal of the optoelectric converter into a digital image signal (col. 3 lines 3-4), a digital signal processor (a processor 38, Fig 3) processing the digital image signal from the analog-to-digital converter (see col. 2, lines 37-40), and a wireless communication interface (Bluetooth module 40, Fig 3);

- and a user module (remote control 20, Fig 3) that comprises a wireless communication interface (Bluetooth module 50, Fig 3), which corresponds to the wireless communication interface of the main body, a user input unit (a control panel 28, Fig 3), a display device (LCD 22, Fig 3), and a controller (controller 58, Fig 3),
 - wherein a digital image signal of the digital signal processor may be transmitted to the user module through the wireless communication interface of the main body (40 and 50, Fig 3) and displayed on the display device (22, Fig 3) of the user module (20, Fig 3), and a user input signal input through the user input unit (28, Fig 3) of the user module may be transmitted to the digital signal processor through the wireless communication interface of the user module and processed by the digital signal processor (38, Fig 3) (see col. 3, lines 31-38).

The Chiang reference does not specifically teach that an internal display device on the first surface of the user module, an external display device on the second surface of the user

module. However Kawasaki does teach a user module (a folding mobile communication terminal 1, Figs 1A-1C) with a first surface (the inner surface 11 of the housing 12, the surface shown in Fig 1A) and a second surface (the outer surface, the surface shown in Fig 1C) opposite to the first surface that comprises a wireless communication interface, a user input unit (operation unit 14, Fig 1A) on one of the first and second surfaces of the user module (e.g. on the inner surface of the housing, Fig 1A), an internal display device (the main display 13, Fig 4C) on the first surface of the user module (on the inner surface of the housing), an external display device (the sub-display 21, Fig 4B) on the second surface of the user module (on the outer surface of the housing). Kawasaki further does teach the image displayed on at least one of the internal display device and the external display device of the user module (each image displayed on the main display 13 or the sub-display 21 directly after each image is taken) (col. 7, 41 to col. 8, line 14, Kawasaki).

Thus, it would have been obvious to one of ordinary skill in the art to have included the two display devices as taught by Kawasaki into Chiang's image capturing device, as to provide a camera whose construction of two displays is convenient in such a way that the user can take an image straight away on finding a suitable subject even when the housing is in unfolded position (col. 5, lines 40-60, Kawasaki).

Regarding claim 2, Chiang discloses a digital camera system wherein the user module is connectable to and separable (detachably) from the main body (col. 2, lines 31-33),

- the main body (11, Fig 3) further comprises a wired communication interface (physical electrical contact, see col. 4, lines 2-6, Chiang), and

- the user module (20, Fig 3) further comprises a wired communication interface that corresponds to the wired communication interface of the main body (physical electrical contact, see col. 4, lines 2-6), wherein the digital image signal of the digital signal processor may be transmitted to the user module through the wired communication interface, and wherein the user input signal input through the user input unit (28, Fig 3) of the user module may be transmitted to the digital signal processor through the wired communication interface (the contacts permit the control panel 28 to control the operations of the digital camera 10) (see col. 4, lines 9-11, Chiang).

Regarding claim 5, the limitations of claim 1 are taught above, Chiang discloses the digital image signal of the digital signal processor (38, Fig 3) is input to the controller (58, Fig 3) of the user module (20, Fig 3) through the communication interfaces (40 and 50, Fig 3) of the main body and the user module and is controlled by the controller (58, Fig 3) of the user module to be input to and displayed on the display device (22, Fig 3) of the user module (the controller 58 then causes the digital image to be shown on the LCD 22) (col. 3, lines 39-59). Kawasaki does disclose the image displayed on at least one of the internal display device and the external display device of the user module (each image displayed on the main display 13 or the sub-display 21 directly after each image is taken) (col. 7, 41 to col. 8, line 14, Kawasaki).

Regarding claim 6, Chiang discloses the user input signal is input through the user input unit (28, Fig 3) of the user module (20, Fig 3) to the controller (58, Fig 3) of the user module, then transmitted to the digital signal processor through the communication interfaces (40 and

50, Fig 3) of the user module and the main body, and then processed by the digital signal processor (38, Fig 3) (see col. 3, lines 39-59, Chiang).

5. Claims 3 and 4 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Chiang in view of Kawasaki (US 7,173,665) and further in view of Wakui (US 6,256,060).

Regarding claim 3, the limitations of claim 1 are taught above, Chiang and Kawasaki disclose a previewing system has a remote control that is a detachably fixed to an image-capturing device. Chiang and Kawasaki do not disclose a slot into which the user module is inserted. However Wakui discloses a slot (remote controller slot 37, Fig 1) into which the user module (a remote controller 3, Fig 2) is inserted, and when the user module is inserted into the slot, the wired communication interface (connector 57, Fig 3) of the user module is connected to the wired communication interface (connector 33, Fig 1) of the main body (see col. 3, lines 40-45, Wakui).

Chiang, Kawasaki, and Wakui are analogous art because they are from the same field of endeavor for digital camera having separable user module. At the time of the invention, it would have been obvious to a person of the ordinary skill in the art to use Wakui's opening of the remote controller slot in Chiang and Kawasaki's camera. The suggestion/motivation would be to provide a remote controller ejection mechanism which is driven upon operation of a remote controller ejection button 39 to eject the remote controller 3 (see col. 4, lines 8-12).

Regarding claim 4, Wakui discloses that when the user module is separated from the slot, the digital signal processor and the controller of the user module communicate with each other through the wireless communication interface of the main body and the wireless

communication interface of the user module (use of an infrared communication method; see col. 3, lines 57-67, Wakui).

6. Claims 7-12 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Chiang (US 6,809,759) in view of Kawasaki (US 7,173,665), and further in view of Mizutani (7,095,982).

Regarding claim 7, the limitations of claim 1 are taught above, Mizutani discloses a user module further comprises a microphone (310, Fig 4) and an analog-to-digital converter (312, Fig 4; col. 7, lines 47-59, Mizutani).

Chiang, Kawasaki, and Mizutani are analogous art because they are from the same field of endeavor. At the time of the invention, it would have been obvious to a person of the ordinary skill in the art to use Mizutani's microphone and analog-to-digital converter in Chiang and Kawasaki's camera. The suggestion/motivation would be to allow the speaker converting the electrical signal into an audio signal and the memory storing a sounds input via the microphone and a image which is transmitted by the camera has a sufficient memory capacity for storing the sound for a predetermined number of images for a predetermined period of time (see col. 2 lines 44-47 and col. 8, lines 1-12, Mizutani).

Regarding claim 8, Mizutani discloses an audio signal of the microphone is input to the controller of the user module (300, Fig 4) through the analog-to-digital converter (312, Fig 4), then transmitted to the digital signal processor through the communication interfaces (communication means 326, Fig 4) of the user module and the main body (see col. 3, lines 39-52, Mizutani).

Regarding claim 9, Mizutani discloses the audio signal is stored in a recording medium (memory 320, Fig 4) by the digital signal processor (see col. 8, lines 2-8, Mizutani).

Regarding claim 10, the limitations of claim 1 are taught above, Mizutani discloses the user module (a communication apparatus 300, Fig 4) further comprises a digital-to-analog converter (D/A converter 316, 322, Fig 4) and a speaker (a speaker 318, Fig 4) (col. 7, lines 47-59, Mizutani).

Thus, it would have been obvious to one of ordinary skill in the art to have included an D/A converter and a speaker as taught by Mizutani into Chiang and Kawasaki's image capturing device, as to provide a camera which is capable to provide amplification to external speaker and enough power to drive into stereo (col. 7, line 60 to col. 8, line 12, Mizutani).

Regarding claim 11, Mizutani discloses an audio signal stored in the recording medium (memory 320, Fig 4) is transmitted by the digital signal processor through the communication interfaces (communication means 326, Fig 4) of the main body and the user module to the controller (communication system control circuit 350, Fig 4) of the user module (a communication apparatus 300, Fig 4) and then output through the digital-to-analog converter (D/A converter 316, Fig 4) and the speaker (a speaker 318, Fig 4) by the controller (a communication system control circuit 350, Fig 4) (see figure 4 and col. 8, lines 41-62, Mizutani).

Regarding claim 12, Mizutani discloses the digital image signal of the digital signal processor is input to the controller (a communication system control circuit 350, Fig 4) of the user module (a communication apparatus 300, Fig 4) through the communication interfaces (Bluetooth communication means 330, Fig 4) of the main body and the user module and is

controlled by the controller of the user module to be input to and displayed on at least one of the internal display device and the external display device (an external display means 360, Fig 4) of the user module, and wherein the user input signal is input through the user input unit (operating means 362, Fig 4) of the user module to the controller (a communication system control circuit 350) of the user module, then transmitted to the digital signal processor through the communication interfaces (communication means 326, 330, Fig 4) of the user module and the main body, and then processed by the digital signal processor (see figure 4 and col. 8, lines 41-62, Mizutani).

7. Claims 13 and 16-20 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Chiang in view of Mizutani (US 7,095,982), and further in view of Wolf (US 2004/0201688).

Regarding claim 13, Chiang discloses a digital camera system comprising:

- a main body (camera housing 11, Fig 1) that comprises an optical system (lens 12, Fig 1) including a plurality of lenses to optically process light from a subject, an optoelectric converter (CCD 30, Fig 3) converting the light from the optical system into an electrical analog image signal, an analog-to-digital converter (A/D converter 34, Fig 3) converting the analog image signal of the optoelectric converter into a digital image signal, a digital signal processor (processor 38, Fig 3) processing the digital image signal from the analog-to-digital converter, and a wireless communication interface (Bluetooth module 40, Fig 3); and
- a user module (remote control 20, Fig 3) that comprises a wireless communication interface (Bluetooth module 50, Fig 3), which corresponds to the wireless

communication interface of the main body, a user input unit (control panel 28, Fig 3), a display device (LCD 22, Fig 3), and a controller (controller 58, Fig 3),

- wherein a digital image signal of the digital signal processor (38, Fig 3) may be transmitted to the user module (20, Fig 3) through the wireless communication interface (40 and 50) and displayed on the display device (22, Fig 3) of the user module,
- wherein a user input signal input through the user input unit (28, Fig 3) of the user module may be transmitted to the digital signal processor through the wireless communication interface and processed by the digital signal processor,
- wherein the user module is connectable to and separable (detachably; col. 2 lines 31-33, Chiang) from the main body, the main body further comprises a wired communication interface (physical electrical contacts, col. 4, lines 2-6, Chiang), and the user module further comprises a wired communication interface that corresponds to the wired communication interface of the main body (physical electrical contacts, col. 4, lines 2-6),
- wherein the digital image signal of the digital signal processor may be transmitted to the user module through the wired communication interface, and wherein the user input signal input through the user input unit of the user module may be transmitted to the digital signal processor through the wired communication interface (col. 2, lines 1-11, Chiang).

Chiang does not disclose a user module of the digital camera system comprising a microphone, an analog-to-digital converter, a digital-to-analog converter, and a speaker.

Mizutani discloses a user module (communication apparatus 300, Fig 2) of the digital camera system (image pick up apparatus 100, Fig 2) comprising a microphone (310, Fig 4), an analog-to-digital converter (312, Fig 4), a digital-to-analog converter (316, Fig 4), and a speaker (318, Fig 4) (see col. 7, lines 47-59, Mizutani).

Chiang and Mizutani are analogous art because they are from the same field of endeavor. At the time of the invention, it would have been obvious to a person of the ordinary skill in the art to use Mizutani's microphone, analog-to-digital converter, digital-to-analog converter, and speaker in Chiang's camera. The suggestion/motivation would be to perform proper communication in accordance with the predetermined status of the communication apparatus; e.g. the speaker converts the electrical signal into an audio signal and the memory stores a sounds input via the microphone and a image which is transmitted by the camera has a sufficient memory capacity for storing the sound for a predetermined number of images for a predetermined period of time (see col. 2 lines 44-47 and col. 8, lines 1-12, Mizutani).

Chiang and Mizutani do not disclose the user module of the digital camera system comprising an audio signal input through the microphone of the user module may be transmitted to the main body and linked to an image file. However Wolf does teach an audio signal input through the microphone of the user module may be transmitted to the main body and linked to an image file (audio signal is compressed and store as Flashpix Extension data within the image file) ([0025], Wolf).

Thus, it would have been obvious to one of ordinary skill in the art to have included the audio compression technique as taught by Wolf into Chiang and Mizutani's image capturing

device, as to provide a camera for user to record audio into an image file, for example, annotation by photographer ([0025], Wolf).

Regarding claim 16, the limitations of claim 13 are taught above, Chiang discloses the digital image signal of the digital signal processor (38, Fig 3) is input to the controller (58, Fig 3) of the user module (20, Fig 3) through the communication interfaces (40 and 50, Fig 3) of the main body and the user module and is controlled by the controller (58, Fig 3) of the user module to be input to and displayed on the display device (22, Fig 3) of the user module (the controller 58 then causes the digital image to be shown on the LCD 22) (col. 3, lines 39-59, Chiang).

Thus, it would have been obvious to one of ordinary skill in the art to have included the user module as taught by Chiang into Mizutani and Wolf's image pickup device, as to provide a camera which is using the Bluetooth communication protocol to establish the communication link between the module and main camera body (col. 2, lines 45-56, Chiang)

Regarding claim 17, Chiang discloses the user input signal is input through the user input unit (28, Fig 3) of the user module (20, Fig 3) to the controller (58, Fig 3) of the user module, then transmitted to the digital signal processor through the communication interfaces (40 and 50, Fig 3) of the user module and the main body, and then processed by the digital signal processor (38, Fig 3) (see col. 3, lines 39-59, Chiang).

Regarding claim 18, the limitations of claim 13 are taught above, Mizutani discloses an audio signal of the microphone is input to the controller of the user module (300, Fig 4) through the analog-to-digital converter (312, Fig 4), then transmitted to the digital signal

processor through the communication interfaces (communication means 326, Fig 4) of the user module and the main body (see col. 3, lines 39-52, Mizutani).

Chiang, Mizutani, and Wolf are analogous art because they are from the same field of endeavor. At the time of the invention, it would have been obvious to a person of the ordinary skill in the art to use Mizutani's analog-to-digital converter in Chiang and Wolf's camera. The suggestion/motivation would be to allow the speaker converting the electrical signal into an audio signal and the memory storing a sounds input via the microphone and a image which is transmitted by the camera has a sufficient memory capacity for storing the sound for a predetermined number of images for a predetermined period of time (see col. 2 lines 44-47 and col. 8, lines 1-12, Mizutani).

Regarding claim 19, Mizutani discloses the audio signal is stored in a recording medium (memory 320, Fig 4) by the digital signal processor (see col. 8, lines 2-8, Mizutani).

Regarding claim 20, Mizutani discloses an audio signal stored in the recording medium (memory 320, Fig 4) is transmitted by the digital signal processor through the communication interfaces (communication means 326, Fig 4) of the main body and the user module to the controller (communication system control circuit 350, Fig 4) of the user module (300, Fig 4) and then output through the digital-to-analog converter (316, Fig 4) and the speaker (318, Fig 4) by the controller (350, Fig 4) (see figure 4 and col. 8, lines 41-62, Mizutani).

8. Claims 14 and 15 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Chiang in view of Mizutani (US 7,095,982) further in view of Wolf (US 2004/0201688) and further in view of Wakui (US 6,256,060).

Regarding claim 14, the limitations of claim 13 are taught above, Chiang, Mizutani, and Wolf disclose a previewing system has a remote control that is a detachably fixed to an image-capturing device. Chiang, Mizutani, and Wolf do not disclose a slot into which the user module is inserted. However Wakui discloses a slot (remote controller slot 37, Fig 1) into which the user module (a remote controller 3, Fig 2) is inserted, and when the user module is inserted into the slot, the wired communication interface (connector 57, Fig 3) of the user module is connected to the wired communication interface (connector 33, Fig 1) of the main body (see col. 3, lines 40-45, Wakui).

Chiang, Mizutani, Wolf, and Wakui are analogous art because they are from the same field of endeavor for digital camera having separable user module. At the time of the invention, it would have been obvious to a person of the ordinary skill in the art to use Wakui's opening of the remote controller slot in Chiang and Kawasaki's camera. The suggestion/motivation would be to provide a remote controller ejection mechanism which is driven upon operation of a remote controller ejection button 39 to eject the remote controller 3 (see col. 4, lines 8-12, Wakui).

Regarding claim 15, Wakui discloses that when the user module is separated from the slot, the digital signal processor and the controller of the user module communicate with each other through the wireless communication interface of the main body and the wireless communication interface of the user module (use of an infrared communication method; see col. 3, lines 57-67, Wakui).

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kent Wang whose telephone number is 571-270-1703. The examiner can normally be reached on 8:00 A.M. - 5:30 PM (every other Friday off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ngoc Yen Vu can be reached on 571-272-7320. The fax phone number for the organization where this application or proceeding is assigned is 571-270-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information

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KW/YA
17 December 2007



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SUPERVISORY PATENT EXAMINER